CleanGrow

TECHNICAL SPECIFICATIONS AND USER GUIDE FOR BROMIDE ION SELECTIVE ELECTRODE

CleanGrow's bromide ion combination probe is designed for sensing bromide ions in aqueous solutions. This model includes a reference electrode and an ion selective electrode for monovalent bromide ions (Br^-) and is suitable for both laboratory and field applications. This guide contains information about the operation and maintenance of the probe.

The probe is an all solid state ion selective electrode based on carbon nanotube technology. It does not contain any internal filling solution and can work in all positions and stored dry.

Special maintenance is not required, however, before use and after large storage periods it needs to be conditioned in conditioning solution.

TECHNICAL SPECIFICATIONS

- Slope: 54 ± 5 mV/decade
- Concentration range: 0.4 – 8,000 ppm ($5x10^{-6}$ – 0.1 M)
- pH working range: 1 – 12
- Working temperature: 5 – 50°C
- Response time: < 20 s
- Dimensions: Standard diameter 11 mm, length 120 mm
- Connector type: BNC with 1 m cable length

MAIN INTERFERENCES

The probe will not give reliable readings if more than a trace of silver (Ag^+), sulphide (S^{2-}) or mercury (Hg^+) ions are present in the solution. There is also high interference from cyanide (CN^-), iodide (I^-), and the bromide electrode will only give reliable results if these ions are absent or present in an insignificant concentration compared to bromide ions. It also has minor interference from chloride (Cl^-) and hydroxyl (OH^-) ions.

REQUIRED SOLUTIONS

- Bromide standard solution
- Distilled / Deionised water

BEFORE USE

- Remove the protection cap from the tip of the probe.
- Condition the probe with a bromide solution of 1000 ppm for 10 minutes.

MAINTENANCE AND STORAGE

- Store in a cool, dry place.
- Store and transport below 50°C
- When finished measurements put back on the protection cap of the probe.
- Do not leave the probe uncapped for long periods of time.
- Do not hit or scrape the tip of the probes.

MEASURING HINTS

- All samples and standards should be at the same temperature for precise measurement.
- Calibration and measurements times must be similar.
- Always rinse the probe with distilled water and dry between measurements. Use a clean, dry tissue to prevent cross-contamination or shake slightly the probe to remove remaining water drops.
- Slightly shake the probe when immersed in solution to avoid air bubbles enclosed on the tip of the probe.

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